UiPath Reboot Work.™ | Process Definition Document

# Meteo Alarm Tracker

This project automates the monitoring and reporting of weather alerts from the MeteoAlarm website. It efficiently gathers alert data, organizes it into a structured Excel report, and delivers it via email to people who are interested in the specific regions affected by the alerts, ensuring prompt communication of critical weather information.

# Contents

# 1. Introduction

## 1.1 Purpose

The Process Definition Document outlines the business process chosen for automation. The document describes the sequence of actions performed as part of the business process, the conditions and rules of the process prior to automation (AS IS) as well as the new sequence of actions that the process will follow as a result of preparation for automation (TO BE).

The PDD is a communication document between:

- The RPA Business Analyst and the SME/Process Owner. The goal is to ensure that the RPA Business Analyst has the correct understanding of the process and has represented it accurately.
- The RPA Business Analyst and the Development team (represented by the Solution Architect and RPA Development Lead). The goal is to ensure that the process is documented appropriately and to a sufficient level of detail so that the Solution Architect can then create the solution based on the PDD content.

## 1.2 Objectives

The business objectives and benefits expected by the Business Process Owner after automation of the selected business process are:

- Reduce processing time per item by 80%.
- Better Monitoring of the overall activity by using the logs provided by the robots.

## 1.3 Key Contacts

Add here any stakeholders that need to be informed or to approve changes to the process:

| **Role** | **Name** | **Contact Details** (email, phone number) | **Notes** |
|---|---|---|---|
| **developer** | Bianca Bozga | bianca.bozga@stud.ubbcluj.ro | |
| **developer** | Stefan Macovei-Grigoras | stefan.macovei@stud.ubbcluj.ro | |
| **mentor** | Stefan-Otniel Pater | stefan.pater@stud.ubbcluj.ro | |
| **developer** | Alin Grig-Mihis | alin.mihis@ubbcluj.ro | |
| **developer** | Erik Maidik | erik.maidik@stud.ubbcluj.ro | |
| **developer** | Luca Raul Obis | luca.obis@stud.ubbcluj.ro | |

## 1.4 Minimum Pre-requisites for the Automation

a) Filled in Process Definition Document
b) Test Data to support development

c) User access and user accounts creations (licenses, permissions, restrictions to create accounts for robots)
d) Credentials (user ID and password) required to logon to machines and applications

# 2. AS IS Process Description

## 2.1 Process Overview

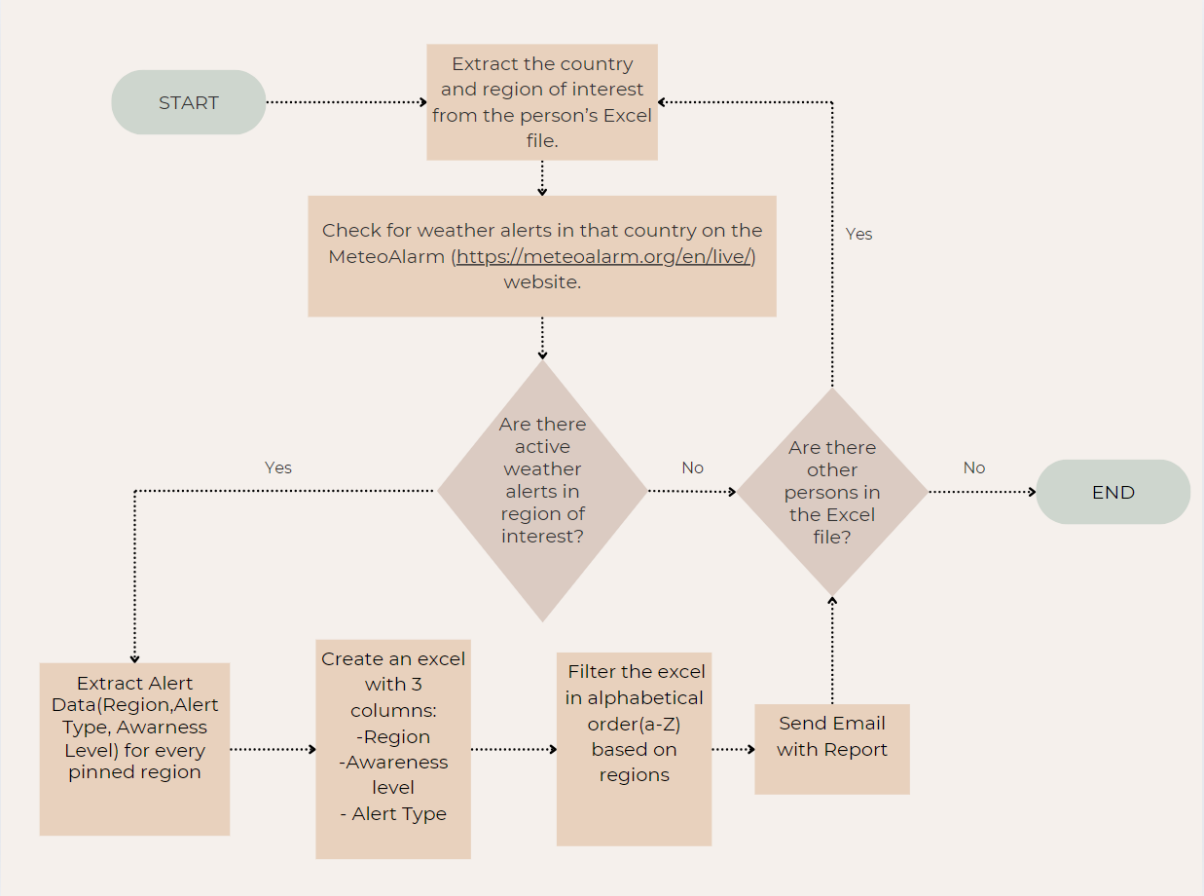
| Item | Description/Answer |
|---|---|
| **Process Full Name** | ***Weather Alert Notification Process*** |
| **Process Area** | Notification and Communication |
| **Department** | Weather Monitoring |
| **Short Description** (operation, activity, outcome) | ***The process involves collecting weather alerts from various regions and generating an Excel report. It then sends an email with the report, using information from another Excel file that contains personal details, including the regions and countries of interest for each person. This ensures that the relevant individuals receive the alert report for their specified location of interest.*** |
| **Role(s) required in applications to perform the process** | n/a |
| **Process schedule and frequency** | On business request |
| **Number of times the process is ran by selected frequency** | One time |
| **Process execution time** | ***15 min*** |
| **Process Restrictions** | ***no*** |
| **Peak Period (s)** | ***It depends based on region*** |
| **Peak Volume Approximate increase** | ***7x*** |
| **Number of persons performing the process** | ***1/2*** |
| **Expected Volume increase during next periods** | ***n/a*** |
| **Percentage Un-handled exceptions** | ***5%*** |
| **Input data description** | ***The input is an Excel file with columns for Name, Email, Country, and Region, listing individuals along with their corresponding regions and countries.*** |
| **Output Data description** | ***The output includes a weather alerts report sent via email and an Excel file containing the weather alerts with columns for Region, Alert Type, and Awareness Level.*** |

## 2.2 Applications Used

| Application Name | Version | Application Language | Thin/Think Client | Environment/ Access method | Comments |
|---|---|---|---|---|---|
| **Excel** | 2019 | English | Think Client | Desktop Application | Used for generating the report, must ensure the correct version is installed. |
| **Outlook** | 2019 | English | Thin Client | Desktop Application | Used to send the email with the Excel attachment. |
| **Meteo Alarm** | N/A | JSON/English | N/A | Web/HTTP Request | API call to fetch weather alert data for each country. Returns regions with issues for the specified country. |

## 2.3 AS IS Process Map

### 2.3.1 High Level Process Map




### 2.3.2 Detailed Level Process Map

**Step 1 : Open Excel and Select Person**

- Open the Excel file containing the list of people containing 4 columns(Name, Email, Country, Region).
- Select the next person in the list.
- Extract the country and region of interest for that person.

**Step 2 : Navigate to Website**

- Open browser and go to https://meteoalarm.org/en/live/.
- Wait for the website to fully load.

**Step 3 : Select Country**

- Identify the **"Search for Country"** search bar.
- Enter the country of interest into the search bar.

**Step 4 : Select Region**

- Identify the **"Search for Region "** search bar.
- Enter the region of interest into the search bar.

**Step 6 : Check for Alerts:**

- Look for alert indicators for that country.
- If no alerts are present:
  - Return to Step 1 to select the next person from the Excel list
- If there are any alerts go to the next step

**Step 6 : Extract Alert Information:**

- Identify the **"Search for Area"** search bar.
- Enter the region of interest extracted from the Excel file.
- If an alert is present, capture the following information:
  - Region name
  - Awareness level
  - Alert type

**Step 7 : Create Excel Report**

- Open or create a new Sheet for the country in the Alerts Excel file.
- Insert data into columns: **Region**, **Awareness Level**, **Alert Type**.

Step 8: Send Email

- Compose an email with the subject "Meteo Alarm Report."
- Set Importance to High and Sensitivity to Personal.
- Send the email to the relevant recipients.

**Final Step: Repeat Process**

- **Return to Step 1** and repeat all actions until there are no more persons left in the Excel file.
- End the process when all entries have been processed.

## 2.4 Process Statistics

**High Level statistics**

| Processes | Windows | Actions | Mouse clicks | Keys pressed | Text entries | Hotkeys used | Time |
|---|---|---|---|---|---|---|---|
| {total_applications_count} | {total_windows_count} | {total_actions_count} | {total_clicks} | {total_keys_pressed} | {total_text_entries} | {total_hotkeys} | {process_execution_time} |
| **3 (Browser, Excel, Email)** | 4 | 38 | 30 | 4 | 4 (page url,country, region,email) | 0 | 15 min |

**Detailed statistics**

| Window name | Mouse clicks | Text entries | Key pressed |
|---|---|---|---|
| {#windows}{name} | {total_clicks} | {total_text_entries} | {total_keys_pressed} {/windows} |
| **Browser (Meteo Alarm)** | 10 | 3 | 0 |
| **Email Client (Outlook)** | 5 | 1 | 0 |
| **Excel (Report Generation)** | 15 | 0 | 4 |

## 2.5 Detailed AS IS Process Actions

| #Action | Input | Description | Details (Screen/Video Recording Index | Exception Handling | Possible Actions |
|---|---|---|---|---|---|
| Step 1: Open Excel and Select Person | Excel file containing Name, Email, Country, Regi | *Open the Excel file and select the next person from the list, extracting their country and region* | Screen 1 | If Excel file is not found, show an error message and prompt user to open the file manually | Re-open Excel file manually |
| **Step 2: Navigate to Website** | Website URL: https://meteoalarm.org/en/live/ | Open browser and go to the Meteo Alarm website | Screen 2 | If website fails to load, retry after 10 seconds | Retry loading the website |
| **Step 3: Select Country** | Country name from Excel | Enter the country into the "Search for Country" field on the website | Screen 3 | If country is not found, verify input or select from suggestions | Enter country manually |
| **Step 4: Select Region** | Region name from Excel | Enter the region into the "Search for Region" field on the website | Screen 4 | If region is not found, check spelling or retry | Enter region again |
| **Step 5: Check for Alerts** | Alert indicators on the website | Look for alert indicators for that country | Screen 5 | If no alerts found, proceed to the next person | Continue to next person |
| **Step 6: Extract Alert Information** | Region name from Excel | Capture region, awareness level, and alert type if an alert is present | Screen 6 | If alert details are unavailable, return to next person | Skip to next person |

| #Action | Input | Description | Details (Screen/Video Recording Index | Exception Handling | Possible Actions |
|---|---|---|---|---|---|
| **Step 7: Create Excel Report** | Alerts information (Region, Awareness Level, Alert Type) | Open or create a sheet in the Excel file and insert data into columns for the country | Screen 7 | If unable to open the file, ensure the file path is correct | Retry opening the file |
| **Step 8: Send Email** | Email recipients from Excel | Compose and send an email with the subject "Meteo Alarm Report" | Screen 8 | If email fails to send, verify connection or re-enter email details | Retry sending email |
| **Final Step: Repeat Process** | Next person in the Excel file | Repeat all steps until all persons in the Excel file are processed | N/A | If process is interrupted, manually continue from where it left off | Continue process |

## 2.6 Input Data Description

| #Action | Sample | Input Type | Location | Are inputs Natively Digital*? | Are the inputs Structured*? |
|---|---|---|---|---|---|
| **Open Excel and Select Person** | List of people with columns for Name, Email, Country, Region | Excel file | Shared drive folder | Yes | Yes |
| **Navigate to Website** | https://meteoalarm.org/en/live/ | Web page URL | Internet | Yes | Yes |
| **Select Country** | Country and Region | User input | Website search bar | No | No |

| #Action | Sample | Input Type | Location | Are inputs Natively Digital*? | Are the inputs Structured*? |
|---|---|---|---|---|---|
| **and Region** | name (e.g., "France" and “Paris”) | | | | |
| **Check for Alerts** | Alert indicators for regions | Website data | Website alert panel | Yes | No |
| **Extract Alert Information** | Region name, awareness level, alert type | Text data | Website alert section | Yes | No |
| **Create Excel Report** | Region: "Paris," Awareness: "High," Type: "Rain" | Excel file | Shared drive folder | Yes | Yes |
| **Send Email** | Subject: "Meteo Alarm Report” | Email message | Email client | Yes | No |
| **Repeat Process** | Next row of Excel file | Process step | Excel | Yes | Yes |

# 3 TO BE Process Description

In this section the proposed improvements to the process, actions to the process will be outlined as well as the actions proposed for automation and the type of robot required. **This will be cross-checked by the Solution Architect.**

## 3.1 Detailed TO BE Process Map

| Action number | Description | Type |
|---|---|---|
| 1 | The robot retrieves the file path by invoking GetFilePathAssets from the Orchestrator. A log message is generated to indicate the action's start. If a timeout of 6 seconds occurs, an exception is thrown and the workflow stops with an error message. If no error occurs, the output variable is set with the retrieved file path. | |

| | | |
|---|---|---|
| 2 | The robot invokes KillExcelProcess to close any open Excel processes, preventing errors that could arise when attempting to open a file that's already open. | |
| 3 | The robot triggers the CheckUsersFile action to verify if the users' file exists. This process is wrapped in a try-catch block. Within the try block, the robot checks the file's existence at the provided path using UiPath's FileExists method. If the file is found, the process continues seamlessly. In case of a FileNotFoundException (IOException), an exception is triggered to handle the error appropriately. | |
| 4 | The robot triggers the ReadUsersCreateAlerts action to read the users' file and generate alerts. A starting message is logged to mark the beginning of this activity. The robot uses the ExcelApplicationScope to open the user files in read-only mode, followed by reading the data with ReadRange into a DataTable. For each unique user, the robot then processes the data and creates separate worksheets in the alert file for each identified country. | |
| 5 | The robot initiates the APICalls process, passing the path to the alert file as an input argument. Upon entering the workflow, a log message is generated. In the event of a failure, the robot retries the API call once. The robot then reads the alert file and, for each sheet, makes an HTTP GET request with the country as a parameter. The response, in XML format, is deserialized, and the data is stored in a DateTable, subsequently writing the information back into the alert file. The API call is set with a 6000ms timeout. | |
| 6 | The robot initiates the SendEmail process, providing paths to the users and alerts files. It opens the files, iterates through each user, retrieves their region and country, and filters corresponding alerts. If alerts are found, they are compiled into an email body, and the email is sent via Outlook. If no alerts are found, the email step is skipped. Errors are logged for traceability. | |

## 3.2 Parallel Initiatives

| **Initiative Name** | **Process Action(s) where it is identified** | **Impact on current Automation Request** | **Expected Completion Date** | **Contact Person** |
|---|---|---|---|---|
| UI Automation | Navigate to Website,Select Country and region | *Initial automation solution, slower execution due to manual navigation and interactions* | n/a | n/a |
| API Automation | Check for Alerts, Extract Alert Information | Improved data extraction efficiency and reduced manual interaction | n/a | n/a |

## 3.3 In Scope for RPA

All actions in the process are included within the scope of RPA. The entire workflow will be automated, with the robot performing all tasks, from opening files, searching for information, extracting data, generating the Excel report, to sending emails. No human intervention will be required throughout the process.

## 3.4 Out of Scope for RPA

Since the entire process is automated, there are no activities or actions outside the scope of RPA. All steps in the process, from opening the Excel file, checking weather alerts, extracting data, generating reports, to sending emails, are handled by the robot, with no manual intervention required.

## 3.5 Exception Handling

The Business Process Owner and Business Analysts are expected to document below all the business exceptions identified in the automation process. Exceptions are of 2 types and both need to be addressed:

**Known exceptions** = previously encountered. A scenario is defined with clear actions and workarounds for each case.

**Unknown** = New situation that was not encountered before. It cannot be predicted and in case it happens it needs to be flagged and communicated to an authorized person for evaluation.

| Exception | Scenario | Action/Workaround |
|---|---|---|
| API Call Failure | API call for fetching weather alerts crashes or times out | Retry the API call up to 1 time; if it fails, log the error and skip to the next person in the list |
| File Not Found | The Excel file with recipient data cannot be located | Log the error and halt the workflow |
| XML Exception | Unable to parse the xml file due to invalid format or characters | Retry to get the data and if it still persists, skip |
| I/O Error | Input or output file operations fail (e.g., reading or writing to Excel) | Log the error and halt the workflow |
| TimeoutException | An operation takes longer than expected, exceeding the allowed time limit (e.g., API call or file operation) | Depending on the case, retry or halt the workflow |

| | | |
|---|---|---|
| HttpRequestException | Bad response from the server | Retry 1 time and it it still persists, halt the workflow |
| InteropServices.COMException | The format of the email address is not correct and the email can not be sent | Log the error and skip this user |
| MailException | The email address is missing completely | Log the error and skip the user |
| NullReference | A required data is not set | Halt the workflow |

**Unknown**

| Exception | Scenario | Action/Workaround |
|---|---|---|
| Excel Process Blocked | The process is blocked while working with Excel | Log the error, send notification, and skip the current transaction |
| Website Not Working | The website is not accessible or not working | Log the error, notify the responsible team, and proceed to the next transaction |

### 3.5.1 Known Business Exceptions

Details regarding how the robot should handle the exceptions.

| Exception Name | Action | Parameters | Actions to be taken |
|---|---|---|---|
| *Invalid email* | *Sending emails* | *Email Address* | *Log the error*<br>*Go to the next transaction* |

### 3.5.2 Unknown Business Exceptions

An umbrella rule that includes a notification needs to be designed for all other exceptions that could happen and cannot be anticipated.

*e.g.: for all other cases which do not follow the rules defined an e-mail should be sent to: exceptions@company.com with a screen shot and robot should proceed to next transaction.*

## 3.6 Applications Errors & Exceptions Handling

A comprehensive list of all errors, warnings or notifications should be consolidated here together with the action to be taken for each by the Robot. There are 2 types of exceptions/errors:

**Known** = Previously encountered and action plan or workaround available for it (e.g. SAP unresponsive during peak times)

**Unknown** = these are exceptions and errors that cannot be anticipated but for which the robot needs to have a rule so that the RPA solution is sustainable.

### 3.6.1 Known Applications Errors and Exceptions

Details regarding how the robot should handle the exceptions.

| Error/Exception Name | Action | Parameters | Actions to be taken |
|---|---|---|---|
| *Server not responding* | *Getting alerts data* | *Error message* | *Retry 1 time* |
| *Orchestrator not responding* | *Getting assets* | *Error message* | *Halt the process* |

### 3.6.2 Unknown Applications Errors and Exceptions

An umbrella rule that includes a notification needs to be designed for all other exceptions that could happen and cannot be anticipated.